Fiber-Optic Biosensor

DESCRIPTION:

NRL has developed a highly sensitive, highly selective fiber-optic biosensor. The system measures the formation of a fluorescent complex at the surface of an optical fiber. Antibodies or DNA-binding proteins on the fiber-optic surface provide the mechanism for recognizing the analyte of interest and immobilizing a fluorescent complex on the fiber. The system is particularly well-suited for detection of hazardous toxins or microbiological materials and has undergone extensive field testing.

ADVANTAGES/FEATURES:

- Rapid detection (within minutes)
- Sensitivity (parts per billion)
- Able to detect up to four agents simultaneously using multiple probes
- Remote detection via fiber-optic cable
- Lightweight and compact for portability; capable of battery operation
- Disposable probes with long shelf-life
- Licensable under the following US patents: 5,061,857; 5,077,210; 5,141,312; 5,183,740; 5,354,654; 5,430,813; and 6,245,296

APPLICATIONS:

- Environmental monitoring (atmosphere, groundwater, and soil)
- Food safety
- Clinical diagnostics

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